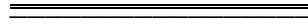
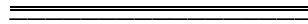


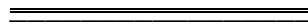
The Bill Blackwood Law Enforcement Management Institute of Texas



Challenges to Implementing Continuous Improvement in Law Enforcement



**A Leadership White Paper
Submitted in Partial Fulfillment
Required for Graduation from the
Leadership Command College**



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ABSTRACT

Police agencies should efficiently employ holistic Continuous Improvement (herein "CI") to improve management of public assets entrusted to them. Many organizations announce a dedication to CI, averring that they efficiently manage taxpayer monies. However, they have most often implemented a single CI project such as CompStat or TEAMS and not assimilated CI to all their business processes. Integration of an agency wide or "holistic" CI improves cost effectiveness and resources utilization. Agencies with holistic CI spend tax dollars better, and communities receive enhanced returns on investment. CI seeks to integrate all processes into the most efficient personnel and asset management.

Police no longer restrict services to crime fighting and improving community quality of life. They control traffic, participate in special events, respond to disasters, maintain personnel and facilities, and offer education opportunities; they also operate jails, investigate crimes, arrest criminals, patrol neighborhoods, and perform other traditional services. Police acquire and administer enormous assets, including fleets of vehicles, buildings, computers, scientific laboratories, radio dispatch and records systems, public administration systems and personnel, community programs, and many other resources. Effective management requires a focus beyond simple crime fighting and community policing, the basics of CompStat, to manage all police assets.

Holistic CI is an efficient mechanism to manage personnel and physical assets. Once agencies implement holistic programs, community service is improved. Police processes are performed more efficiently. And, taxpayers receive additional value for money spent.

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INTRODUCTION

Almost every police agency's mission statement identifies CI as both a process and program goal. Their most common implementation is CompStat, a CI project specific to reducing particular crimes and thereby enhancing community quality of life. CompStat has been introduced in a variety of formats to large and small agencies nationally. Agencies tout CompStat as a linchpin to process improvement and an instrument to achieve greater budgetary efficiency.

CompStat, an acronym for Comparative Statistics, does not look at every agency process to enhance productivity. CompStat focuses upon processes perceived to improve crime-fighting effectiveness, i.e. maps of crime areas and weekly command staff meetings, and weighs this against specific crimes that are thought to most affect the community. Although CompStat may be an effective tool to fight these specific crimes, it ignores potential holistic process improvements. These better enhance all agency services and efficiency.

While CompStat focuses on specific crimes, the mainstream effort of most police is no longer crime fighting. Agencies may spend 80% of their time performing administrative and public services. CompStat manages by reverting to a reactionary model; it first prioritizes resources to specific crime fighting and then everything else. By ignoring potential process improvements in units, such as transportation, jail administration, public service, communications, agency administration, and support, CompStat fails to provide the most efficient management. It ignores components that perform the majority of services and have great potential for process improvement.

However, holistic CI requires changes to police culture, management, and operations. To achieve holistic improvements, the chief must commit his entire agency to CI. The dilemma facing police managers is whether agencies can achieve “enough” improvement by concentrating on specific projects such as CompStat or whether they should use holistic CI.

A countervailing consideration is that CI projects do not work well absent a controlled process. Police have very little control over crimes, such as when and where domestic violence will occur. CompStat works best against defined crimes known to be perpetrated within distinct geographic areas. CompStat encourages concentration of resources. One questions whether CompStat is an effective all round crime fighter. It does not focus on fighting all crime; it only focuses on a few crimes deemed to have a negative effect on communities. Even if CompStat achieves the crime fighter goal, it ignores potential improvements in the majority of the agency’s other processes, which are not directly focused on fighting specific crimes. Police managers have great control over equipment utilization, jail administration, communication, and selected other processes. These deficiencies beg criticism of CompStat and recommends holistic CI as the preferred performance enhancer.

Holistic CI concentrates on processes that are controllable. It routes agency resources to the most efficient use and fights a broader crime spectrum, while improving administrative and service functions that constitute the majority of agency efforts. This paper reviews and analyzes whether police should implement CI as single CompStat-type projects or commit to holistic improvement through a review of all processes.

POSITION

CompStat is New York City Police Department's celebrated accountability process that has been replicated in other agencies, including Washington, DC, Los Angeles, Philadelphia, Austin, Baltimore, and San Francisco. Many smaller agencies have purchased programs emulating CompStat to evaluate and improve performance (Clark, 2009). Chiefs dialog well and often describe their agency as progressively applying CI. Most often, they are referring to CompStat.

The primary differences between a process evaluation, such as CompStat, and holistic CI are inclusion, participation, and commitment. Agencies use tools, such as benchmarking, surveys, and statistical studies, to evaluate processes. In addition, CI implements change by evaluating feedback from agency processes and customers against organizational goals (Riley, Parsons, Duffy, Moran, & Henry, 2010). CompStat is a CI evaluation of one or two agency processes but not a total quality management program. Holistic CI includes an integrated approach, a pervasive agency wide system, a management focus on results, an emphasis on improvement of community quality of life, and proactivity (Willis, Mastrofski, & Weisburd, 2004). There is a gap between CompStat's highly focused missions of crime fighting and community improvement and the majority of agency daily work (Willis, Mastrofski & Weisburd, 2003). Inclusion, pervasiveness, integration, and proactivity are the primary dissimilarities distinguishing CompStat from holistic CI.

A systemic assessment contrasts holistic CI and CompStat. First, holistic CI is more inclusive than CompStat. Every agency unit is included in CI process review. A process is the mechanism by which the agency performs work. CompStat restricts itself

to processes employed by civil enforcement and major crimes divisions and supporting units. It traditionally ignores other agency components. Even when CompStat embraces traffic, jail, administration, IT, transport, or other units, it fails to integrate resources. Reviewing only civil and major crimes units ignores optimization of other components and synergetic benefits.

CI embraces all workers, whereas CompStat includes only managers. CI should involve all levels of personnel (Rose, 2005). It affects and must involve every aspect of an organization, including clerical workers, commissioned officers, supervisors, middle management, department heads, and the chief. By restricting CompStat to command personnel, agencies fail to arm officers with “quantifiable information,” or information based on facts, not hunches. Team membership must include all stakeholder groups. When teams identify specifics, they can permanently fix problems and pass on long term benefits. Involving line officers leverages their knowledge of day-to-day work to transform performance. Not including all stakeholders depreciates process optimization.

Ideally, managers make decisions about process selection and implementation. They design a delivery process. Process feedback originates with the workers, who employ statistical tools, knowledge of work processes, and facilitators to identify, reduce, or eliminate suboptimal processes. The emphasis is upon incremental improvement, i.e. evolution rather than giant leaps (Riley, *Minnesota Public Health Collaborative for Quality Improvement*, 2007).

CompStat’s “show trial” forum often increases a commander’s psychological defensiveness, which sometimes prevents lower ranks from sharing observations to

improve the process. In police bureaucracy, voicing an opinion is often interpreted as criticism of the commander who did not think of an idea first. As a result, line officers lack accountability, which often leads to indolence and apathy, while middle managers become lackeys. CI employs a team roundtable to exchange ideas. This enhances idea exchange. Psychological defenses are reduced because team members are essentially equals working to solve a problem.

Teams examine agency processes. All process stakeholders, including workers performing the process, should be team members. Team leaders are familiar with the process, and they can translate management inputs needed to keep the team on track with goals. The method is often referred to as DMAIC, which stands for define, measure, analyze, improve and control (DMAIC). Teams delineate problems, customers' concerns, and project goals. They measure key aspects of the process and collect performance data. Data is analyzed to verify cause and effect, and agencies seek out the root cause of the defect under investigation. Then the process is optimized based upon data analysis and intuitive inputs of team members. Sample runs are undertaken in order to prove the new strategy. Finally, control measures are implemented to ensure that deviations are corrected before they result in defects.

DMAIC reveals systemic differences between CompStat and CI. CompStat limits analysis to generating statistical maps of crime and inputs to improve manager's roundtable data review. CompStat is often a prewritten program, acquired by an agency and implemented without customization. CI is a more detailed process. CompStat provides statistics verifying effectiveness in defined crime fighting within a specific geographic

area. CI seeks agency-wide improvements by looking at individual processes through the eyes of managers, workers, and customers.

Some chiefs claim their command staff can change the organization from the inside out through leadership, “quality” techniques, and continual improvement. Unfortunately, “quality control” mainly consists of using statistics to criticize commanders for lower performance than their peers attain. Improvement is measured by one or two statistics related to crime reduction or community quality instead of overall agency efficiency. Agencies lacking a comprehensive agency-wide program fail to realize best asset utilization (Riley, 2007). Without integration, there is a danger of merely going through the motions.

CompStat is frequently perceived as a statistical program. It generates metrics that report performance before and after change, but it is often deficient in identifying root cause and desired process changes. CI uses statistics to interpret and clarify data. CI focus is broader. The goal of process review is to make it the best possible or world class. CI’s goal is for quality to permeate the entire agency, creating systems as perfect as possible and functioning at “world class” performance levels. CI questions the validity of sacred organizational beliefs and traditional ways “things are done in this agency.” CI is not a statistical organizational overlay; it must be integrated into agency structure. Agencies should focus on mission and vision (Imai, 1986). CI does not detract from this model. Although metrics are a CI tool, they are not the objective. The goal is outcome improvement.

CompStat measures performance, including response times, clearance rates, and arrests. This does little to assess agencies’ addressing communities’ (or

customers') global needs or asset administration. CompStat may actually inhibit an agency's strategy of public service or efficient asset utilization. For example, CompStat does not hold officers accountable when engaging in non-crime problem solving activities. Significant resources can remain unaccounted for.

Police strategy for public service and crime fighting has changed. In 1829, Sir Richard Mayne, the Associate Commissioner of London's police, and an innovator of policing strategy, wrote:

The primary object of an efficient police is the prevention of crime: the next that of detection and punishment of offenders ... The protection of life and property, the preservation of public tranquility, and the absence of crime, will alone prove whether those efforts have been successful and whether the objects for which the police were appointed have been attained.
Mayne, 1829 (page 3).

Today, law enforcement provides first response to crimes, maintains order, protects people and property, and operates some correctional facilities, but up to 80% of all law enforcement activity does not involve response or prevention of crimes. Citizens involve police in humdrum tasks of roadside assistance, finding pets, and checking locks (Cole & Smith, 2010). Crime fighting and public service require acquisition and administration of enormous resources, including fleets of vehicles, buildings, computers, scientific laboratories, radio dispatch and records systems, public administration systems and personnel, community programs, and many other assets. Sixty percent of law enforcement personnel are not devoted directly to arresting criminals (Dempsey & Forst, 2011).

CompStat presents itself as a multilayered approach to crime reduction. As described by one chief, CompStat focuses upon: timely intelligence, rapid response, relentless follow-up, and accountability (Moore, 2003). In reality, CompStat

institutionalizes Mayne's ideas about police, which are prevention, detection, and punishment. Systematically, agency command compiles a statistical summary of crimes, arrests, and police activity. This data is forwarded to a central unit for collation into an agency-wide database. Reports present a unit's performance statistics and are summarized by command and the geographic area. Management is allegedly able to discern emerging crime trends, compare performance of various units, and hold commanders accountable. Commanders are empowered to select their own tactics, blending problem-oriented and community policing concepts to produce results.

Agencies using CompStat vary in sophistication. Initially, they are attentive to the importance of improving services and assign managers to enhance processes called Commanders roundtable. These discussions later evolved to employing CI tools, including process maps, root cause analysis, control charts, and other analysis techniques. Agencies subsequently adopt a customized model to manage performance and redesign their processes (Gennaro & Vito, 2004).

CompStat is disparate to the FBI's Uniform Crime Reports. It captures data, interalia, on gun offenses, quality of life offenses, such as public intoxication, panhandling, or prostitution, and other statistics related to an agency goals catalog. CompStat views such crimes as having the greatest impact on community quality, citizen security, and community livability. Crime strategy meetings foster a "management team" approach. Meetings nurture creative and comprehensive solutions because decision-makers can immediately commit assets to solution of problems. Teams theoretically integrate all commands, although CompStat usually dictates acquiescence by ancillary or support assets, which mandates primacy to units engaged

in preferred crime fighting. Superficial inclusion of adjutant units often fails to balance resources or achieve highest efficiency.

CompStat may achieve a measured reduction in crimes. That should not be the only outcome. Agencies should seek efficient use of all assets to achieve goals such as greatest impact upon the community, best use of assets and personnel, lowest cost, and most ethical treatment of customers. Crime reduction is a specific outcome of a process improvement and one of the many goals.

A simple illustration of holistic CI is an agency reviewing its jail. New York Corrections Commissioner Bernard Kerik initiated the Total Efficiency Accountability Management System (TEAMS) to track jail related concerns (Henry, 2006) and demonstrate the viability of jail improvement. Improving jails lends to change and enhances other agency processes, such as record administration, medical care, legal, booking, and patrol. CompStat ignores much of this as irrelevant to crime fighting or community enhancement. However, the greatest value to customers might be achieved from this type of review.

CI is customer relevant. CompStat addresses a customer base relevant only to crime fighting: the citizens, newspapers, politicians, etc. It ignores customer wishes for overall agency efficiency, cost effectiveness, and performance. Thus, CompStat neglects many of the agency's customers or at least the needs of the entire customer base. In the previous example of a jail project, agency customers include prisoners, which ranged from hard-core criminals to first offenders engaged in one-time, minor criminal activities. It might be difficult for individual officers to identify prisoners as jail "customers," but recognition of that constituency can be important to process

improvements. When an agency implements CI, the command team generates a strategy or an improvement initiative. Their stratagem focuses on essential processes to meet “customer” expectations. These are the processes that enable the agency to add value and supply services to customers.

A CI goal might be to reduce the legal costs of prisoner’s lawsuits, anticipating that prisoners will have fewer claims if they are legally and ethically treated during custody. The agency’s mission is to maintain a secure, safe, and economically effective jail. Accomplishing these goals enhances agency performance because saved costs can be redirected to more activities that are productive. Jail process improvement may depend upon several agency divisions: operations, jail, administration, legal, records, etc. Each unit contributes to jail efficiency and derives benefits from improving the jail within its own processes. For example, more efficient records administration may result from improved jail booking processes. A team consisting of all stakeholders examines the jail process, defines problems and a statistical basis for evaluating the work process, seeks solutions, and recommends agency-wide change. Management implements suggested improvements that are compatible with agency policy, budget, and goals.

Unfortunately, CI is sometimes mistakenly allowed to become one-dimensional when agencies adapt techniques from economically driven entities. CompStat’s generics focus often fails to define the best process improvement mechanism. When an agency implements CompStat, it frequently does not include administrative, financial or efficiency metrics, instead basing goals on community improvement and crime reduction. These traditional CompStat benefits are primary. Successful projects should

be SMART, which stands for specific, measurable, achievable, realistic and time-bound (SMART). CompStat is “limited” SMART. It fails to achieve any multiplier by synergy with other projects that continuously improve the entire agency.

Models are redefining the role of police. Reactive models direct assets to immediate problems and responds to the event. Richard Mayne’s vision of 1829 London police was reactive. Bratton’s 1994 NYPD CompStat is reactive. Community policing models encourage prevention, public relations, and education to improve lifestyles. CI is proactive. Proactive models anticipate present and future needs. Agencies are evolving from a reactive “professional model” focused on responding to crime to a “service delivery model” focused on random patrol, rapid response and integration of police assets. Some agencies adopted a proactive “community policing model” encouraging crime prevention and problem solving activity. Agencies may use one or multiple models. Selection depends on agency culture and perceptions of agency leaders often without measurements defining the best model.

Agencies using CI employ models that are individualized by process review and statistically verified. Since CompStat’s 1994 inauguration, quality tools have evolved. The nature of agency business drives processes to improve performance. Although police are not profit driven, they have virtually the same motivations to use CI. It reduces defects and variations. CI increases efficiency, increases process compatibility, and institutes effective controls. It expands decision-making criterion, effecting change within the entire organization. These results are as pertinent to police as to profit-driven entities.

Statistics validating CompStat's effect on crime reduction and improving community quality are questionable (Levitt, 2004). New York's introduction of CompStat correlated with the introduction of 5,000 new and better-trained officers and the integration of transit police into city police units. To the casual observer, more police equals less crime. New York also streamlined police command structure. External forces simultaneously reduced reported crime. Economic and demographic changes removed people from impoverished and crime ridden environments, gentrification of the population made crime a less desirable avocation, and independent crime reduction initiatives that had nothing to do with CompStat were major contributing factors.

NYPD's implementation of CompStat lacked integrity safeguards. Management discouraged some officers from reporting crime, and supervisors manipulated statistics to create a false appearance of crime reduction (Moses, 2000). Since CompStat is linked to resource allocation, managers could manipulate statistics to exaggerate crime and obtain greater resources. CI uses teams peopled from more than one division. Bias of units attending the roundtable is balanced by complementary representatives from other units. DMAIC has inherent safeguards to prevent management tampering. Since reporting officers are team members, there is less incentive to manipulate statistics. If CompStat were an accounting system, it would be a set of books reporting a single business activity. The books lack integration, and are easy to "cook." Consolidated statements best reflect overall performance. CI provides a consolidated reporting system for the agency's processes.

When people execute work, success and failure are usually the result of team efforts, not an individual. Hierarchical management focuses upon leaders' responsibility

for failure or success. CompStat holds line managers accountable for specific crime and quality of life strategies. When something goes wrong chiefs focus on commanders the wrong way. They blame individuals. Management should focus on improving processes, not blaming individual leaders. CI encourages group success. If individual leadership is deficient, it changes as part of the process review.

There are vivid differences between CompStat and holistic CI. CI diverges in integration, pervasiveness, focus, emphasis, and proactivity. CI gets components working together to achieve goals. This often requires dramatic changes in management technique and attitude, which is sometimes impossible to achieve in traditional agencies with hierarchical command structures. The outcome is a dramatic improvement in agency performance and not dependent upon focused strategies of crime prevention directed toward perceived community improvement.

COUNTER POSITION

Police agencies use techniques that work within their unique command structures. CompStat was designed by police for police. It incorporates proven statistical tools. CompStat is designed to improve the qualities that matter most to the agency's most important customers: leaders and citizens of the community they serve. After implementation of CompStat, violent crimes in New York such as murder, robberies, and rape were significantly reduced. Overall crime went down 57% and murder 65% (Bratton, 1998). There are other considerations in police work than achieving highest efficiency. Holistic CI may be contrary to police culture. Legal considerations such as tort or contractual liability and maintenance of a hierarchical

command structure are important. Labor agreements and civil service regulations may have to be adjusted.

Making cultural and structural changes required by CI may be impossible. In response to a perceived need to improve New York's police, Commissioner William Bratton built a constituency demanding improvement in NYPD's crime solving and prevention. He focused on a single process, CompStat, and not a revision of the entire agency. Two years later, Bratton's successor, NYPD Commissioner Howard Safir sought to expand CI to improve overall efficiency. He failed. It was difficult for his NYPD to shift from reactive policing to community-based problem solving because these values were new and threatening (Vito, Walsh, & Kunselman, 2004). Changing culture often means someone must admit that prior leadership is wrong. While Safir had authority, he could not effect change because his subordinate commanders were unwilling.

Police rely upon command and control doctrine. Compliance is often ingrained into officers at the expense of performance. Entrenched procedures impede change. For example, sometimes an agency's 10-7 "out of duty" protocol is mandatory to be followed by a patrol officer, making it an unchangeable icon. CI doctrine places the worker in charge of transition. Command might consider failure to report 10-7 status to envisage an enhanced potential for officers to be off task or endanger line officers by not confirming their status. It is unlikely a CI team would sacrifice officer safety when suggesting process improvements. Patrol processes can be examined for other efficiencies and improved customer satisfaction. Nonetheless, resistance to change is enhanced by chain of command deep-rooted in agencies.

Cultural mindsets are hard to break. Performance is often like a train that passes by stations to stay on schedule. Police work sometimes becomes “creature of habit”, ingrained by the necessity that the next shift should be able to pick up from the prior shift, and continue to perform work the same way. Law defines many stages in the policing process. Other steps are part of agency procedures because they work well and all levels are familiar with them. Officers must be retrained if a CI process alters procedures. Experimenting with methods that work, albeit with perceived inefficiencies, may be undesirable.

Taken to an extreme, CI could allow individual officers to design their personalized version of charting potential criminal activity, effecting arrests, or employing patrol assets. Those individualized solutions may be contrary to law, agency policy, or public wishes, and conflict with command decisions. NYPD relied upon local laws and regulations that may not be the same in other locations (Weisburd, Mastrofski, Greenspan, & Willis, 2004). Local laws may prohibit some CI innovations. Police civil service and unions often challenge CI programs. Rigid job descriptions or labor contract provisions limit change. Employees may be able to opt-out of programs that to succeed must be agency wide. If job descriptions do not include an officer’s CI participation, they might not be ordered to participate. Even officers desiring to engage in CI may be precluded by union contracts or regulations.

Because CI employs sophisticated statistical and mathematical analysis it is often viewed as an academic concept that has little real application to street policing. Procedures used to measure quality are controversial. CompStat employs metrics accepted in a large number of agencies. Data can be exchanged, and training

centralized. More than one entity can access common information. Holistic CI customizes its metrics, defining importance based upon agency goals. Interagency comparison and data exchange is more difficult, because each agency adopts its particular definition.

The issue facing agency management is whether to implement a restricted improvement process such as CompStat, or a broader CI program that will improve the entire agency. Effecting change is very difficult. To make CI work, agencies must change. CI requires a top to bottom commitment. Today, police are judged as much for their economic efficiency as effectiveness in fighting crime. Because they are required to perform a large number of community services and manage large amounts of public assets, an effective CI program would probably enhance agency acceptability.

CONCLUSION

Police agencies should implement holistic CI. They should not rely upon individual CompStat inspired projects. Holistic programs provide a greater opportunity to agencies seeking to improve their services or processes. They will better serve the public and achieve more value from taxpayer dollars.

CompStat is a limited process review designed to improve specific crime reduction and community enhancement. CI programs focus on the entire agency changing agency culture, management, and operations to achieve the most efficient operation of each division. Although CompStat is designed by police for police and has been integrated into a large number of agencies, these may be functioning at a less than optimal level. Such agencies lack efficient allocation of resources from support

divisions to operations. Their implementation is reactive and designed by commanders instead of teams of managers, experts, and workers who best know the process.

CompStat has extensive statistical bases but few controls to ensure honest reporting. Holistic CI has integral controls built into the tools used for analysis (Riley, 2007). Team members are from the whole agency, not a specific unit, so they are less subject to command influence. Analysis demonstrates improvements on an agency-wide basis, not selected crimes within specific geographic areas. CI statistical tools are subject to verification by quantitative means, including standard deviation, null analysis, probability calculations. Finally, the agency goal is not to improve how performance “looks” but rather to develop a world class process for the entire agency.

Since 1994, CompStat has been tagged with substantial controversy as to effectiveness. Surveys indicate small agencies are/would implement CompStat and other continuous improvement projects (Clark, 2009; Collins, 2005). Many agencies identify a continuous improvement goal without understanding required changes in culture and revision of systems, believing continuous improvement constitutes a CompStat type process review rather than an integrated system. CI presents an opportunity for significant economic and efficiency improvements by agencies. Those relying upon isolated projects to meet specific goals may be missing opportunity to achieve world-class performance. CI deserves consideration by large and small agencies looking to improve performance, enhance customer approval, and best serve their constituency.

REFERENCES

- Bratton, W. (1998) *Turnaround: How America's top cop reversed the crime epidemic*, New York: Random House.
- Clark, C. (2009). *Implementing the Compstat program in small departments*. Huntsville, TX: The Bill Blackwood Law Enforcement Management Institute of Texas.
- Cole, G. F., & Smith, C. E. (2010). *Criminal justice in America*. Florence, KY: Wadsworth Publishing.
- Collins, D. (2005). *An analysis of Compstat management system principles used by small police agencies in Texas*. Huntsville, TX: The Bill Blackwood Law Enforcement Management Institute of Texas.
- Dempsey, J. S., & Forst, L. S. (2011). *An introduction to policing*. Independence, KY: Delmar Cengage Learning.
- Gennaro, F. & Vito, W. F. (2004, July). Compstat: The managers perspective. *International Journal of Police Science and Management*, 7(3), 187-197.
- Henry, V. E., (2006, March). Managing crime and quality of life using Compstat: Specific issues in implementation and practice. Paper presented at United Nations Asia and Far East Institute for the Prevention of Crime and the Treatment of Offenders, UNAFEI Seminar No.6, Fuchu, Tokyo, Japan. Abstract retrieved from http://www.unafei.or.jp/english/pdf/RS_No68/No68_12VE_Henry2.pdf
- Imai, M. (1986). *Kaizen: The key to Japan's competitive success*. New York: McGraw-Hill/Irwin.

- Levitt, S. D. (2004, Winter). Understanding why crime fell in the 1990's: Four factors that explain the decline and six that do not. *Journal of Economic Perspectives*, 18(1), 163-190.
- Mayne, R. (1829, September 25). New police instructions. *The Times: London, England*, p. 3.
- Moore, M. H. (2003, July). Sizing up Compstat: An important administrative innovation in policing. *Chriminology & Public Policy*, 2(3), 469-493.
- Moses, P. (2005, October 25). These stats are a crime. *The Village Voice News*. Retrieved from <http://www.villagevoice.com/2005-10-25/news/these-stats-are-a-crime/>
- Riley, W. J. (2007a, February 7). *Review and analysis of quality improvement techniques in police agencies*. Paper presented at the Adapting Quality Improvement (QI) to Public Health, Cincinnati, OH. Retrieved from <http://www.phaboard.org/wp-content/uploads/ReviewandAnalysisofQITechniquesinPoliceDepartments.pdf>
- Riley, W. J. (2007b, April 19). *Minnesota public health collaborative for quality improvement*. Paper presented at the kick-off meeting of the QI Collaborative, Minneapolis, MN. Retrieved from <http://www.lpha-mn.org/Resources/QI/Bill%20Riley%20for%20LPHA1.pdf>

- Riley, W. J., Parsons, H. M., Duffy, G. L., Moran, J. W., & Henry, B. P. (2010, January/February). Realizing transformational change through quality improvement in public health. *Journal of Public Health Management & Practice*, 16(1), 72-78.
- Rose, K. H. (2005). *Project quality management: Why what and how*. Fort Lauderdale, FL: J. Ross Publishing.
- Vito, G. F., Walsh, W. F., & Kunselman, J. (2004, July). Compstat: The managers perspective. *International Journal of Police Science and Management*, 7(3), 187-195.
- Weisburd, D., Mastrofski, S. D., Greenspan, R., & Willis, J. J. (2004). *The growth of compstat in American policing*. Washington, DC: Police Foundation.
- Willis, J. J., Mastrofski, S. D., & Weisburd, D. (2004, Fall). Compstat and bureaucracy: A case study of challenges and opportunities for change. *Justice Quarterly*, 21(3), 463-496.
- Willis, J. J., Mastrofski, S. D., & Weisburd, D. (2003). *Compstat in practice: an in-depth analysis of three cities*. Washington, DC: Police Foundation.
- .